Agenda

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- CADU with a Set Error
- Script Loading and Modification
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- Summary

About SCTGEN

- SCTGEN is a program that creates CADUs, PDS/EDS, RBP, EDU, and TC products
- Tiger is the name of the libraries that are used by SCTGEN. It uses an ASCII text script file to define a scenario
- When looking at a script, there are streams. A stream is a component that makes or handles a unit (packets, frames, CLTU, etc)
  - Packet streams flow into mux stream, which flows into CADU streams, the CADU streams flow into another mux stream which flows into an output module

About SCTGEN cont.

- SCTGEN is designed to run on Sun and HP UNIX platforms, and SGI platform.
- There are two parts to SCTGEN:
  - SCTGEN GUI - controlled by TCL and TK software, used to create ASCII script file
  - SCTGEN Application - uses the ASCII script file to create the output products
- Generation of all output products follow procedure similar to CADU generation
- To start SCTGEN type *run_sctgui*

CADU Generation

- **Select the *CADU* option and click on the *Scenario* pull-down menu in the SCTGEN GUI menu panel**
  - **Click on the New menu item**
  - **The Scenario Definition panel will be displayed.**
- **Enter:**
  - **Enter *42* in the S/C field**
  - **Enter *64* in the APID field**
  - **Enter *10* in the VCID field**
- **Click on the addAPID button**
  - **Information is added to screen**
- **Repeat for APID 65**

CADU Generation (cont'd)

- Select *View*
  - The CADU Stream panel will be displayed
- Select the *sc42out* button
  - The *CADU Output Definition* panel will be displayed
- Completing the CADU Output Definition menu panel:
  - Enter required information on the CADU Output Definition menu panel
    - » Enter Maximum Units
  - Optional Entries
    - » Multiple files
    - » Device - Default or Other

CADU Generation (Cont'd)

- **Select *Other* as the device to specify a filename**
- **Select OK and Close to exit CADU Output Definition panel**

- **Select *sc42mux* button**
  - **The FRAME Multiplexer for sc42 Menu Panel is displayed**

CADU Generation (cont'd)

- **Completing the FRAME Multiplexer for sc42 Menu Panel**
  - **Specify Mux by Range or**
  - **Specify Mux by Pattern**
  - **Specify Default Mux Pattern**
- **Select *Close* to exit the FRAME Multiplexer for sc42 Menu Panel.**
- **Select *vc10* button**
  - **The Frame Definition Menu Panel is displayed**

CADU Generation (cont'd)

- **Completing the Frame Definition Menu Panel**
  - **Service is Path**
  - **Enter the Max. No of Frames**
  - **Select the value of the Replay flag**
  - **Select *yes* for the Frame Sync**
    - » **The SYNC Definition Menu Panel is displayed**
    - » **Note the Sync pattern and Sync length may be modified**
    - » **Select *OK* to return to the Frame Definition Menu Panel**
  - **Select *yes* for the Frame Data**
    - » **The FRAME DATA Definition Menu Panel is displayed**

CADU Generation (cont'd)

- **Completing the Frame Definition Menu Panel**
  - » **Select *Input Units***
  - » **FRAME DATA Definition Menu Panel is expanded to include information on Input Units**
  - » **Select *OK*, Frame Definition Menu Panel is displayed**
  - – **Select *yes* for RS Encode**
    - » **The RS Definition Menu Panel is displayed**
    - » **Note that the RS Interleave and RS Code Length fields may be modified**
    - » **Select *OK*, The Frame Definition Menu Panel is displayed**
  - – **Select *OK* to exit the Frame Definition Menu Panel**

CADU Generation (cont'd)

- Select *vc10mux* button from the CADU Stream Menu Panel
- The Packet Multiplexer for vc10 Menu Panel is displayed
- Completing the Packet Multiplexer for vc10 Menu Panel
  - Specify of Mux by Range for each APID or
  - Specify Mux by Pattern for each APID
  - Specify Default Mux Pattern
- Select *Close* to exit the Packet Multiplexer for vc10 Menu Panel.

CADU Generation (Cont'd)

- **Select the *ap0064* button**
  - **The Packet Definition Menu Panel will be displayed**
- **Completing the Packet Definition menu panel:**
  - **Enter Max number of packets**
  - **Enter the required data in the Data Region Definition menu panel**
  - **Enter the Packet Secondary Header information**
  - **Enter the Packet Length**
  - **Discussion of other fields on the Packet Definition Menu Panel**
  - **Select OK and Close to exit the Packet Definition menu panel**
- **Repeat for ap0065**

CADU Generation - Script Generation

- **Select the Script Button from the CADU Stream panel**
  - **The CADU script will be displayed**
- **You may Edit, Save or Run the script**
- **To edit the script:**
  - **Use the mouse button to highlight script text to be modified, or use the standard cursor movement, backspace key, etc.**
- **Save the script:**
  - **Enter directory and filename (*modis*) in the appropriate fields and press the save button. The Script will be saved as *modis.script***

CADU Generation - Script Generation (Cont'd)

- **To Run the Script:**
  - **Select the Run option**
  - **The SCTGEN Main Menu panel will display the following:**
    - » **Run script**
    - » **sctgen v1.4 <t14>**
    - » **Run completed**
  - **All messages are preceded by a time stamp**
- **Error messages will be displayed before the *Run completed* message**

CADU with *SET* Error

- Select *CADU* and the *Scenario* button from the main Menu Panel
  - The Scenario Definition Menu Panel will appear
- Select *View*
  - The CADU Stream Menu Panel will be displayed
- Select the *ap0064* button
  - The Packet Definition panel will be displayed
- Select *Yes* in the Errors field
  - The Error Listing Definition panel will be displayed
- Select *AddError* button
  - The Error Definition menu panel will be displayed

CADU with a *Set* Error (Cont'd)

- Enter *seterr* in the Label field
- Select *Set* as the Type
- The *Convey Error* field should be set to *No*
- The *Units with Error* field should be set to *All*
- Enter:
  - 4 in the Start Bit field
  - 4 in the Total Bit field
  - 6 in the Value field
- Select *OK* to save Close to and exit
  - The error should be listed on the Error Listing display

CADU with a *Set* Error (Cont'd)

- **Select the error on the screen**
  - **The error name will now be listed in the Selected Error Field**
- **Select *Close* to exit the *Error Listing* menu panel**
- **Proceed as discussed previously for CADU Generation**
- **Select the script button**
  - **A new script will be generated with error information**

Script Loading and Modification

- Use the previously saved CADU scenario
- Select CADU from the main SCTGEN GUI menu panel
- Select the *Load* option under the Scenario menu
  - The Input Window menu panel will be displayed
- Enter the script name in the scenario field on the input window menu panel
  - Note: Do not have to enter *.script* extension
- Select the Scenario button and proceed as usual

Script Modification (Cont'd)

- **Select the *Script* button**
  - **The Script Window is displayed**
- **At this point it is possible to edit the script**
- **The script window serves as a text editor**
- **You can use the GUI screens to make changes and regenerate the script**

Creation of SCTGEN Data from CCSDS Packets

- Used for externally created packets that are in CCSDS format
- Accessed from the Packet Data Region Definition Display
- APID and packet length must match data in packetfile
- SCTGEN will skip packets that do not match the APID and packet length information

Creation of SCTGEN Data from CCSDS Packets (Cont'd)

- Select the Input Units Option
- Enter the pathname for the file in the File field
- Enter length
- Select the *packetfile* option
  - When this option is selected SCTGEN reads the header information from each packet

Command Line Execution of Scripts

- **You can run existing scripts from the UNIX command line**
- **To run an existing script invoke the SCTGEN executable**
  - **Example:**
    - **../Tiger/bin/sctgen *scriptname***
    - ***Note: the .script extension does not need to be entered***

SCTGEN Script Run Error Messages

- **Error messages are in the following form:**
  - **stream.pkt.ap0064.region.data: path must exist and does not ...**
  - **followed by references to where in the application code error occurred**
- **We are interested in the first message**
  - **“stream.pkt.ap0064.region.data” is the line in the script that contains the error**
  - **“path must exist and does not” provides information on what is causing the error**
    - » **This message indicates that the stream.pkt.ap0064.region.data is missing information from the Data Region Definition menu panel associated with packet ap0064**

SCTGEN Script Run Error Messages (Cont'd)

- **These lines in the script relate to the GUI menu panels where the data was initially entered**
- **For instance, this message indicates information was not entered on the DATA Region Definition menu panel**

Note: At this point the error may be corrected by modifying the script to contain the path information or the information may be on the DATA Definition menu panel through the GUI

Summary

- SCTGEN will create CADUs, PDS/EDS, RBP, EDU, and TC products
- The information needed on menu panels to create a CADU
- Able to execute scripts from the SCTGEN GUI or the UNIX command line
- SCTGEN User's Guide may be found at

http://esdis.gsfc.nasa.gov/ETS/etsdoc.html